

MSD Safety Committee Meeting

Lawrence Berkeley National Laboratory

November 7, 2005



Materials Sciences Division

Agenda



Materials Sciences Division

- ◆ MSD Safety Committee
 - ◆ Membership
 - Introduction of new personnel
 - Review of research group membership
 - ◆ Discussion: Function of the MSD Safety Committee
 - Roles
 - Policies
- ◆ Review of accidents, injuries and near misses, MSD, LBNL and DOE
 - ◆ Latimer Hall fire
 - ◆ Oil Spill
 - ◆ HF cylinder explosion
- ◆ Deficiencies, citations, adverse findings
 - ◆ Waste QA Exception Reports (3)
- ◆ Areas of emphasis
 - ◆ Electrical Safety
 - Briefing: Tom Caronna
 - ◆ Chemical Management System
 - ◆ SAA management
 - ◆ Laser Database
 - ◆ Peroxidizable chemicals
 - ◆ Fume hood maintenance
 - ◆ New training for scientific supervisors and mentors
 - ◆ Foundry Transition to operations
- ◆ Discussion, comment
 - ◆ Observations
 - ◆ Support needs
 - ◆ Training issues
 - ◆ etc

MSD Safety Committee

Membership

Roles

Functions

MSD Safety Committee

Membership



Materials Sciences Division

Chair and Deputy Chair:

R. Kelly, J. Ager

Building Managers:

P. Ruegg (62/66), D. Owen (72), S. Irick (2)

MSD EHS Administrator:

Carmen Bates Ross

EHS Liaison to MSD:

J. Seabury (EHS)

Waste Generator Assistant:

H. Hansen (EHS)

Electrical Safety Expert:

Jim Severns (MSD)

MSD EH&S Technician:

Paul Johnson

Representative*

Ilan Gur

Jytte Rasmussen

Ingrid Cotoros

Ron Tackaberry

Marca Doeff

Norman Manella

J. Beeman

Adriana Rocha

Chris Jozwiak

Z. Liliental-Weber

Shaul Aloni

Jie Song

Alex Liddle

Frank Ogletree

Doreen Ah Tye

Christopher Weber

Rong Yuan

Barry Blizanac

Yabing Qi

Robert Schoenlein

Roger York

Timothy Stachowiak

E. Saiz

A. Istratov

Group

Alivisatos

Bertozzi (temporary)

Chemla

CXRO (tentative)

DeJonghe / Visco

Fadley

Haller / EMAT

Hou

Lanzara

Liliental-Weber

Molecular Foundry

Molecular Foundry

Molecular Foundry

Molecular Foundry

NCEM

Orenstein

Ritchie

Ross

Salmeron

Shank

Somorjai

Svec / Frechet

Tomsia

Weber

* Each research group in MSD, including each program in the Molecular Foundry, will designate a primary and backup representative to serve on the Safety Committee

New Members



Materials Sciences Division

- ◆ Introduction of Rick Kelly, MSD/Molecular Foundry Facility and EH&S Manager (66-203, x4088, RJKelly@lbl.gov)
 - ◆ Rick's role vs. John Seabury, Howard Hanson, Joel Ager, Peter Ruegg and others
- ◆ Introduction of Paul Johnson as part-time EH&S Technician (66-250E, x5810)
 - ◆ Paul's activities and responsibilities to date and future
 - CMS, peroxidizable chemicals, SAA inspection and management
 - Fume hood assessment, ergonomics, etc.
- ◆ Other new members?

Functions and Key Activities of the MSD Safety Committee



Materials Sciences Division

- ◆ Functions of safety committee and representatives
 - ◆ Represent all research groups within MSD
 - ◆ Stimulate leadership and staff participation in safety program
 - ◆ Advise Division management and EH&S on safety and health matters
 - ◆ Perform essential monitoring, educational, investigative and evaluative tasks
 - ◆ Serve as contact point for EH&S matters in each research group
 - ◆ Serve as conduit for bringing EH&S information back to research groups
- ◆ Key Activities
 - ◆ Recommend changes to existing safety rules or the development of new rules
 - ◆ Recommend improvements in hazard identification and control measures
 - ◆ Report and discuss unsafe conditions
 - ◆ Review accidents, incidents and close calls in MSD and generate “Lessons Learned” for use in the Division
 - ◆ Disseminate EH&S information at group or lab meetings
 - ◆ Document inspections, investigations, meetings and other EH&S actions at the group level

MSD Safety Committee: Meetings



Materials Sciences Division

◆ Proposed Meeting Parameters

- ◆ Meet every two months (for now, probably drop back to quarterly meetings in the future)
- ◆ First Tuesday of every other month, 9:00 am in B62 or B66
- ◆ Attendance is required by either primary or secondary rep
- ◆ Rick will arrange one brief (<15 minute) awareness training session for each meeting on topics of current interest to MSD or LBNL
- ◆ Written minutes will be distributed electronically for review

Review of Accidents, Incidents and Near Misses

Injuries and Incidents: Lab Fire



Materials Sciences Division

- ◆ 6/29/05-Latimer Hall Fire
 - ◆ Hotplate did not “turn off” resulting in fire
 - ◆ Apparently a defective hotplate, not clear if it is a design defect in the model or if it had been abused
 - ◆ Very similar incidents at LLNL, PNNL in 2003- there is something systematically wrong!
- ◆ **Action**: Periodically test hot plates to ascertain that they actually de-energise when turned off
 - See hand out: lessons learned
 - Proposed: Put blue dot label on tested hot plates



Injuries and Incidents: Oil Spill



Materials Sciences Division

- ◆ 8/12/05 Oil spill from diffusion type vacuum pump in B 62 parking lot
 - ◆ Equipment was being loaded for transport to salvage
 - ◆ Old diffusion pump partly full of oil spilled
 - Old diffusion pump oil can contain PCBs
 - ◆ Area was roped off, sample of oil sent to lab, no PCBs detected
 - ◆ Also, potential PCB containing capacitors were in equipment being loaded for salvage
- ◆ **Action**: Do not send salvage any equipment with oil, including large oil filled capacitors (>100 cubic inches)
 - ◆ Discuss salvage restrictions with groups

Injuries and Incidents: HF Cylinder Explosion at UCSB



Materials Sciences Division

- ◆ Old lecture bottle of anhydrous HF (liquefied gas) exploded at UCSB
- ◆ Build up of pressure due to reaction with steel
 - ◆ $\text{HF} + \text{Fe} \rightarrow \text{H}_2 + \text{FeF}_2$
- ◆ Storage limit on HF cylinders— 24 months
 - ◆ Date when received
- ◆ No one in MSD is currently using anhydrous HF
- ◆ **Action**: Mention at group meeting



Deficiencies, Citations, Adverse Findings

Noncompliance Notices: Hazardous Waste Characterization Errors



Materials Sciences Division

- ◆ Three errors in waste characterization (QA exceptions)
 - ◆ 7/22/05: pH listed as 13, actually 3.5-8.1
 - Sodium hydroxide had been neutralized
 - ◆ 6/3/05: Unreported chromium in waste
 - Possibly from contamination from stainless steel processing equipment
 - ◆ 10/19/05: Legacy material, label said potassium dichromate, really NOCHROMIX in sulfuric acid
- ◆ **Action:**
 - ◆ Ask all waste generators to think carefully about the characteristics of the waste as packaged in the SAA
 - ◆ OK to “over report” likely components, e.g., chromium that might have leached out of stainless steel process vessel
 - ◆ Prevent legacy materials!

Areas of Emphasis

Emphasis Area: Electrical Safety



Materials Sciences Division

- ◆ Walkthroughs with Jim Severns and EH&S consultant identified common electrical safety errors in MSD labs. *Briefing by Tom Caronna, handout.*
 - ◆ Daisy chaining of power cords
 - ◆ Hanging other lines (e.g, gas, data) off of flexible power cords or conduit
 - ◆ Blocking of access to power panels
 - ◆ Inappropriate plugs on heating tape, other small equipment
 - ◆ Unprotected electrical power within 36" of emergency shower
- ◆ Action:
 - ◆ Inspect your labs for these common problems. Ask for help if needed. Best resource is Jim Severns. Document findings in an e-mail to Carmen, who will enter deficiencies into LCATS for tracking.

Emphasis Area: CMS Use



Materials Sciences Division

- ◆ Chemical Inventory
 - ◆ Paul Johnson conducted a review of MSD facilities that showed variable but often low completion of labeling/inventory- *See handout*
 - 66: Labeled 60% Inventoried 75% Net inventory 45%
 - 62: Labeling 75% Inventoried 77% Net inventory 58%
 - 72: Labeling 100% Inventoried 82% Net inventory 82%
 - 2: Labeling 77% Inventoried 56% Net inventory 43%
 - ◆ Virtually no inventorying of gas cylinders (not included in numbers above)
 - ◆ Inventory range in labs: 0-100%
- ◆ **Action:**
 - ◆ Work with group to update chemical container labeling and tracking
 - ◆ Target is a 90% complete inventory
 - ◆ Paul will be working with groups to facilitate CMS use
 - Establish a system within your group to assure that this is kept up
 - Training is available: EHS 346-Attend class or review presentation and handout

Emphasis Area: SAA Management



Materials Sciences Division

- ◆ Fines were proposed for deficiencies noted during June inspections
 - ◆ Suspended at Ricks' request
- ◆ Subsequent inspection by Rick revealed a moderate level of problems
 - ◆ Most significant: Failure to appoint a replacement for a departing SAA manager
- ◆ More recent inspections by Paul Johnson and Howard Hanson have found pretty good compliance-thanks!
- ◆ Three waste QA exception reports!
- ◆ **Action:**
 - ◆ Verify names of SAA managers for each lab (see handout)
 - ◆ Put in place a system to **GUARANTEE** (100%) that:
 - Waste is disposed prior to 9 month time limit
 - Each lab has a primary and a backup SAA Manager
 - Send name changes/additions to Rick Kelly and Howard Hanson
 - A replacement SAA manager is appointed prior to departures, vacations, other absences-E-mail name of replacement to Rick Kelly and Howard Hanson

Emphasis Area: Laser Database



Materials Sciences Division

- ◆ Inventory of all LBNL 3b and 4 laser systems, including those not in use: *See handout*
- ◆ <https://ahdlaser.lbl.gov/index.jsp>
- ◆ **Action**: Verify that the inventory is complete for all lasers, including lasers in storage
 - ◆ Does your lab have 3b or 4 lasers that are not in the database?
 - ◆ Notify Rick/Carmen of any discrepancies.

Emphasis Area: Peroxidizable Chemicals



Materials Sciences Division

- ◆ Survey indicates that most of program have not been implemented
 - ◆ Routine testing
 - ◆ Labeling
 - ◆ Dating upon receipt
 - ◆ Recordkeeping of testing results
- ◆ Paul Johnson will be working with groups to implement the peroxidizable chemical control program
 - ◆ Providing test strips, labels
 - ◆ Training owners how to identify, test and label peroxidizable chemicals
 - ◆ Note: Paul does not do the testing, he helps your group do the testing
- ◆ **Action:**
 - ◆ Identify and label all peroxidizable chemicals. Test those where there is no written record of testing within last 12 months

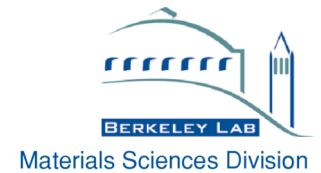
Emphasis Area: Fume Hoods



Materials Sciences Division

- ◆ Several malfunctioning fume hoods have been noted
 - ◆ Damaged sash supports
 - ◆ Malfunctioning dampers
 - ◆ Silenced face velocity monitors
 - ◆ Excessive flow
- ◆ Paul will be doing quarterly “mini” inspections of all fume hoods
- ◆ **Action:**
 - ◆ Ask all users to report all malfunctions, including alarms, to Rick Kelly and John Seabury for assessment or repair

Emphasis Area: New EH&S Training for Scientific Supervisors



- ◆ EHS 026: EH&S for Scientific Managers and Supervisors
- ◆ EHS 024: EH&S for Mentors
- ◆ A MSD version of these classes will be developed
 - ◆ Both classes will be rolled into one class
 - ◆ Presented several times in December and January in bldgs 62-203
 - Dec 7: 1-3 pm
 - Dec 13: 9-11 am
 - January 24 9-11 am
- ◆ All MSD scientific managers and mentors must attend one of these sessions or attend both classes during routine offerings
 - ◆ It will be much more efficient to attend one of the MSD classes

Foundry Transition to Operations



Materials Sciences Division

- ◆ Construction: nearing completion
- ◆ Planning for equipment installation
 - ◆ Programmatic equipment (NMR, MOCVDs etc)
 - ◆ Safety related equipment: Hydrogen generator, alarm systems, acid/base waste neutralization, WAA building
- ◆ System for review of proposed work by visitors

Discussion



Materials Sciences Division

- ◆ Areas of concern
- ◆ Feedback
- ◆ Training issues
- ◆ Questions
- ◆ Next meeting: January 10, 9:00 am